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The three Struve pairs have shown no motion since their discovery, and the Herschel pairs are too wide to be of interest as double stars.

R. G. AITKEN.

November 20, 1905.

COMET *b* 1905 (SCHAER).

The second comet of the year 1905 was discovered by SCHAER at Genoa the evening of November 17th. At the time of discovery it was within four degrees of the north pole. It has since moved south very rapidly, and crossed the equator on the 3d of December. The rapidity of this apparent motion was due principally to the fact that the comet was quite close to the Earth. At the time of discovery the comet was about twenty million miles away, less than one fourth of the distance of the Sun. Its nearest approach to the Sun was October 25th, when the distance was one hundred million miles.

Since discovery the comet has been receding from both the Earth and the Sun, and is becoming rapidly fainter. During December it will move southward through *Aquarius*.

The following elements of the orbit of this comet were derived by Mr. A. J. CHAMPREUX and myself from three observations made at the Lick Observatory on the 18th, 21st, and 25th of November; the first two by AITKEN, the last by SMITH. The method used is Professor LEUSCHNER's "short method."

ELEMENTS.

$$\begin{aligned}
 T &= 1905 \text{ October } 25.02430 \\
 \omega &= 132^\circ 07' 26''.8 \\
 \Omega &= 223 \quad 04 \quad 08 \quad .3 \\
 i &= 140 \quad 27 \quad 14 \quad .0 \\
 \phi &= 74 \quad 41 \quad 13 \\
 \log a &= 0.020856 \\
 \log e &= 9.984301 \\
 q &= 1.049195 \\
 \log \mu &= 1.344119 \\
 \text{Period} &= 160.6526 \text{ years}
 \end{aligned}
 \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} 1905.0$$

An attempt was made to pass a parabola through the three positions. The computations were made so as to represent

the three right ascensions and the second and third declinations. The resulting orbit left a residual in the first declination of $-38' 25''$. This residual being so large, the computations were then made without hypothesis regarding the eccentricity, resulting in the foregoing elements.

It may be of interest to computers to know that, by means of the "short method," within two hours after the residual from the parabola was determined, the general orbit (including the constants for the equator) given above, and the representation of the observations was finished.

The constants for the equator 1905.0 and an ephemeris extending to December 29th are given in *Lick Observatory Bulletin* No. 86.

RUSSELL TRACY CRAWFORD.

BERKELEY ASTRONOMICAL DEPARTMENT, Dec. 6, 1905.
